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**Title :** THE RELATIONSHIP BETWEEN PERCUSSION SOUNDS AND SOCIAL STRUCTURE IN HUMPBACK WHALES

**Category :** Behavior

**Student :** Not Applicable

**Preferred Format :** Poster presentation

**Abstract :** Breeding humpback whales have been studied for 12 years off Ecuador (02°S, 81°W). The surface activity showed by the whales in 289 sightings lasting at least 15 minutes was evaluated based on the presence and frequency of five displays producing percussion sounds at hitting the surface: breaching, head-slap, tail-slap, flipper-slap and tail-slash. For this purpose a scale of four levels of intensity was designed, from the highest level 1 (3 different displays exhibited or one display repeated 10 or more times) to the lowest level 4 (no display exhibited). Singletons and groups containing 3 and 4 individuals showed a significantly higher occurrence rate at level 1 (33%, 36% and 31% respectively) than pairs (14.7%) or groups larger than quads (8%) ( $X^2_3=13.23$ ,  $P>0.05$ ). Regarding group composition, subadults singleton showed a significantly higher occurrence rate (92%) than other age-classes for level 1 ( $X^2_4=26.63$ ,  $P<0.01$ ) and a highly significant lower occurrence for level 4 ( $X^2_4=26.63$ ,  $P<0.01$ ). Looking for a relationship between surface activity and group stability, displays exhibited by groups that increased ( $n=21$ ) or decreased ( $n=21$ ) in number were also compared. Three displays were recorded with similar intensity in both types of groups: breaching, head-slap and tail-slash. But tail-slap and flipper-slap were highly significant more frequent in increasing groups ( $X^2=9.85$ ,  $P<0.01$ ). These results suggest that percussion sounds produced by slapping repeatedly the surface with flippers and flukes are used by singletons, both adults and subadults, to call and group with other whales. The high rate of percussion-sound production in trios and quads and the abrupt decrease in larger groups suggest that these type of sounds are also used by competitive groups in formation possibly to transmit information regarding their mating readiness, warning other males about the presence of a female, defining hierarchies or establishing alliances, before to start the pursue of the female.